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August 16, 2005

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Applicant:	Hans Eberle et al.		
Title:	DATA NETWORK WITH INDEPENDENT TRANSMISSION CHANNELS		
Application No.:	09/540,779	Filed:	March 31, 2000
Examiner:	Donald L. Mills	Group Art Unit:	2662
Atty. Docket No.:	004-4253	Conf. No.:	2418

Dear Sir:

Transmitted herewith are the following document(s) in the above-identified application:

(1) Appeal Brief (37 C.R.F. § 41.37) (10 page(s))
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Respectfully submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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APPEAL BRIEF (37 C.F.R. § 41.37)

This brief is in furtherance of the Notice of Appeal, filed on June 16, 2005. The fees required under § 1.17(c), are provided in the accompanying Transmittal.

REAL PARTY IN INTEREST

The real party in interest in this appeal is Sun Microsystems, Inc., as evidenced by the assignment recorded at Reel/Frame 010669/0553.

RELATED APPEALS AND INTERFERERNCES

Appellants have no knowledge of any related appeals or interferences.

STATUS OF CLAIMS

Claims 14, 15, and 18 are presented herein on appeal. Claims 14, 15, and 18 were rejected in a final Office action dated February 17, 2005 (hereinafter, the Final Office Action). That final rejection is now appealed.

Claims 14, 15, and 18 presented herein on appeal are reproduced in the Appendix attached hereto. Claim 18 was originally presented. Claims 14 and 15 were amended in response to an Office action dated July 6, 2004.

STATUS OF AMENDMENTS

No amendments have been filed subsequent to final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

In general, realizations of the claimed subject matter provide a data network system separated into at least two channels. Referring to Figure 1, an exemplary data network system includes channels 130 and 140 which are separate physically and logically. Data network system 100 includes a plurality of nodes 150, 160, 180, and 190 coupled to channels 130 and 140. Each channel transmits data packets having predetermined characteristics or criteria. *See* page 6, line 5-page 12, line 26. The exemplary data network system of Figure 1, selects data for transmission over an appropriate one of the channels based on various criteria, such as latency and bandwidth requirements for the data being transferred. *See* page 7, lines 3-25. Each of channels 130 and 140 schedule transmissions of data packets through data network system 100 according to requirements of the respective identified features of groups of data packets. *See* page 8, line 12-page 9, line 8.

Independent claim 14 is directed to a data network including a sending node, a receiving node coupled to receive a plurality of data information packets from the sending node, and at least a first and second transmission channel coupled to the sending and receiving nodes. Each data information packet transmitted across the network is selected for transmission on one of the first and second transmission channels according to predetermined criteria. *See* page 6, line 5-page 12, line 26; Figure 1. The first and second transmission channels are, respectively, a low latency channel for transmitting data packets meeting a low latency criteria, and a high bandwidth channel for transmitting data packets meeting a high bandwidth criteria. *See* page 6, line 17- 24; page 8, line 12-page 9, line 26. The data network includes a scheduler circuit for the high bandwidth channel coupled to the high bandwidth channel and low latency channel. *See* page 13, line 11-page 17, line 28; Figure 4. The scheduler circuit is coupled to receive a request

sent into the low latency channel, the request requesting permission to transmit a packet over the high bandwidth channel. *See* page 13, line 11-page 14, line 12; Figure 4. The scheduler logic is responsive to the request to provide a grant indication over the low latency channel indicating the request was granted. *See* page 15, line 24-page 16, line 5; page 28, line 31-page 30, line 24. The grant indication is transferred with a higher priority across the low latency channel than other low latency traffic. *See* page 15, lines 27-31; page 29, line 3-page 30, line 11. The grant indication includes a unique identifier corresponding to a number of an output port through which the grant indication was sent. *See* page 31, lines 1-4. During node initialization, a node coupled to the output port listens to grant packets and uses the unique identifier as its node identifier in subsequent transactions over the data network. *See* page 31, lines 4-6.

Dependent claim 18 (which is separately argued) further recites that the request indication, the grant indication and an acknowledge indication are always sent at different times over the low latency channel, thereby avoiding collisions between the request indication, the grant indication and the acknowledge indication. *See* page 29, lines 14-31. The acknowledge indication is sent by a receiving node over the low latency channel to indicate successful receipt of information sent over the high bandwidth channel. *See* page 29, lines 14-16.

Independent claim 15 is directed to a data network including a sending node, a receiving node coupled to receive a plurality of data information packets from the sending node, and at least a first and second transmission channel coupled to the sending and receiving nodes. *See* page 6, line 5-page 12, line 26; Figure 1. Each data information packet transmitted across the network is selected for transmission on one of the first and second transmission channels according to predetermined criteria. *See* page 6, line 5-ppage12, line 26; Figure 1. The first and second transmission channels are, respectively, a low latency channel for transmitting data packets meeting a low latency criteria, and a high bandwidth channel for transmitting data packets meeting a high bandwidth criteria. *See* page 6, lines 17-24; page 8, line 12-page 9, line 26. The data network includes a scheduler circuit for the high bandwidth channel coupled to the high bandwidth channel and low latency channel. *See* page 13, line 11-page 17, line 28; Figure 4. The scheduler circuit is coupled to receive a request sent into the low latency channel, the request requesting permission to transmit a packet over the high bandwidth channel. *See* page 13, line 11-page 14, line 12; Figure 4. The scheduler logic is responsive to the request to provide

a grant indication over the low latency channel indicating the request was granted. *See* page 15, line 24-page 16, line 5; page 28, line 31-page 30, line 24. The grant indication is provided at a fixed time in each frame, a frame being a predetermined time period. The grant indication synchronizes nodes of the network to the frame. *See* page 29, lines 23-31; page 30, line 25-page 31, line 6.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The following grounds of rejection are on appeal:

Ground I: the rejection of claim 14 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,141,329 to Turner in view of U.S. Patent No. 6,404,756 to Whitehill et al. and Turner in view of U.S. Patent No. 6,304,578 to Fluss.

Ground II: the rejection of claim 15 under 35 U.S.C. § 103(a) as being unpatentable over Turner in view of Whitehill et al. and Turner in view of Fluss.

Ground III: the rejection of claim 18 under 35 U.S.C. § 103(a) as being unpatentable over Turner in view of Whitehill et al. and Turner in view of Fluss.

ARGUMENT

Ground I:

Claim 14 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Turner in view of Whitehill et al. and Turner in view of Fluss. Appellants note that the Office Action uses all three references to reject claim 14 for obviousness. In rejecting the claim, the Examiner 1) asserts an interpretation of Fluss that is inconsistent with the disclosure of Fluss; and 2) engages in an examination that fails to establish a prima facie case of obviousness because the references fail to teach or suggest the claimed combination. In re Nielson, 816 F.2d 1567, 1572, 2 USPQ2d 1525, 1528 (Fed. Cir. 1987).

Turner, Whitehill, and Fluss alone, or in combination, fail to teach or suggest that

> a grant indication includes a unique identifier corresponding to a number of an output port through which the grant indication was sent and wherein during node initialization, a node coupled to the output port listens to grant packets and uses the unique identifier as its node identifier in subsequent transactions over the data network,

as recited by claim 14. The Final Office Action relies on col. 6, lines 61-65 of Fluss to supply this teaching. This portion of Fluss teaches a router reading a header of an incoming packet to determine the packet's IP destination address. Fluss fails to teach or suggest that the IP destination address of Fluss is a unique identifier corresponding to a number of an output port through which the grant indication was sent, as required by claim 14. Rather, the IP destination address of Fluss is an IP address to which the incoming packet is being sent. In addition, step 303 occurs during a method of operation of the headend of systems 100 and 200 of Fluss (col. 6, lines 4-6), after the initialization step 302 (Figure 4). Nowhere does Fluss, Turner or Whitehill teach or suggest listening to grant packets during initialization and using a unique identifier included in the grant packet to identify the node in subsequent transactions over the data network, as required by claim 14.

Obviousness is a legal determination based on underlying factual inquiries. Minnesota Min. & Mfg. Co. v. Johnson & Johnson Orthopedics, Inc., 976 F.2d 1559, 1572-73, 24 U.S.P.Q.2d 1321, 1332-33 (Fed. Cir. 1992). Graham v. John Deere Co., 383 U.S. 1, 17 (1966) defines the factual inquiries utilized to evaluate the prior art. Specifically, the prior art is evaluated in terms of: (1) its scope and content; (2) the differences between the prior art and the claimed invention; (3) the level of ordinary skill in the art at the time the application was filed; and (4) objective, or secondary, evidence of nonobviousness such as commercial success, failure of others, long-felt need and unexpected results, which must be considered in reaching a conclusion of obviousness. Graham v. John Deere Co., 383 U.S. 1, 17, 148 U.S.P.Q. 459, 460 (1966); Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1566-67, 1 U.S.P.Q.2d 1593, 1595-96 (Fed. Cir. 1987); Minnesota Min. & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc., 976 F.2d 1559, 1573, 24 U.S.P.Q.2d 1321, 1333 (Fed. Cir. 1992). In the present appeal, the issue

relates to specific differences between the prior art and appealed claims. All claim limitations must be considered in the obviousness analysis. Indeed, it is clear error to ignore limitations clearly set forth in the claims. Panduit Corp., 1 U.S.P.Q.2d at 1603 – 04, 810 F.2d at 1576. None of the references, standing alone or in combination, teach all of the recited limitations. Specifically, the references fail to teach or suggest at least listening to grant packets during initialization and using a unique identifier included in the grant packet to identify the node in subsequent transactions over the data network, as required by claim 14. Therefore, independent claim 14 is allowable, as well as the claim depending therefrom.

For at least these reasons, Appellant respectfully maintains that claim 14 distinguishes over all references of record. Accordingly, the PTO's rejection of claim 14 should be reversed.

Ground II:

Claim 15 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Turner in view of Whitehill et al. and Turner in view of Fluss. In rejecting the claim, the Examiner 1) asserts an interpretation of Fluss that is inconsistent with the disclosure of Fluss; and 2) engages in an examination that fails to establish a prima facie case of obviousness because the references fail to teach or suggest the claimed combination.

Turner, Whitehill, and Fluss alone, or in combination, fail to teach or suggest that

> the grant indication is provided at a fixed time in each frame, a frame being a predetermined time period, and the grant indication synchronizes nodes of the network to the frame,

as recited by claim 15. The Final Office Action relies on col. 6, lines 61-65 of Fluss to supply this teaching. This portion of Fluss teaches a router reading a header of an incoming packet to determine the packet's IP destination address. Fluss fails to teach that the incoming packets are provided at a fixed time in each frame. Further, nowhere does Fluss, Turner or Whitehill teach or suggest a grant indication that synchronizes nodes to the frame. The Final Office Action "interprets" the incoming downstream IP packets of Fluss as grant indications, however, Fluss fails to teach or suggest this interpretation. Even if so interpreted, the incoming IP packets of

Fluss fail to synchronize the nodes to the frame. For at least these reasons, Appellant respectfully maintains that claim 15 distinguishes over all references of record. Accordingly, the PTO's rejection of claim 15 should be reversed.

Ground III:

Claims 18 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Turner in view of Whitehill et al. and Turner in view of Fluss. In rejecting the claim, the Examiner 1) asserts an interpretation of Fluss that is inconsistent with the disclosure of Fluss; and 2) engages in an examination that fails to establish a prima facie case of obviousness because the references fail to teach or suggest the claimed combination.

Turner, Whitehill, and Fluss alone, or in combination, fail to teach or suggest that

> the request indication, the grant indication and an acknowledge indication are always sent at different times over the low latency channel, thereby avoiding collisions between the request indication, the grant indication and the acknowledge indication, the acknowledge indication being sent by a receiving node over the low latency channel to indicate successful receipt of information sent over the high bandwidth channel,

as recited by claim 18. The Final Office Action and the Advisory Action Before the Filing of an Appeal Brief, dated April 29, 2005 (hereinafter, the "Advisory Action) rely on col. 8, lines 42-53 of Whitehill, which teaches inserting a random delay to reduce the likelihood of collision when sending an RTS message. Although randomization reduces the likelihood of collision, randomization does not avoid collisions altogether. The claim recites always sending the request, the grant, and the acknowledge at different times over the low latency channel. That is not taught or suggested in Whitehill or the other references of record. Accordingly, Appellants maintain that claim 18 is patentable over Turner, Whitehall, and Fluss, alone, or in combination.

For at least these reasons, Appellant respectfully maintains that claim 18 distinguishes over all references of record. Accordingly, the PTO's rejection of claim 18 should be reversed.

CONCLUSION

For at least the foregoing reasons, Appellants' presently claimed invention would not have been obvious under 35 U.S.C. § 103(a) as set forth in the Final Office Action. Accordingly, this Board is respectfully requested to reverse the rejections of claims 14, 15, and 18, and direct this application to be issued.

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Nicole T. Cave — Date

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CLAIMS APPENDIX

14. (Previously presented) A data network comprising:

a sending node;

a receiving node coupled to receive a plurality of data information packets from the sending node; and

at least a first and second transmission channel coupled to the sending and receiving nodes, wherein each data information packet transmitted across the network is selected for transmission on one of the first and second transmission channels according to predetermined criteria wherein the first and second transmission channels are, respectively, a low latency channel for transmitting data packets meeting a low latency criteria, and a high bandwidth channel for transmitting data packets meeting a high bandwidth criteria;

a scheduler circuit for the high bandwidth channel coupled to the high bandwidth channel and low latency channel; and wherein the scheduler circuit is coupled to receive a request sent into the low latency channel, the request requesting permission to transmit a packet over the high bandwidth channel, the scheduler logic responsive to the request to provide a grant indication over the low latency channel indicating the request was granted; and

wherein the grant indication is transferred with a higher priority across the low latency channel than other low latency traffic, wherein the grant indication includes a unique identifier corresponding to a number of an output port through which the grant indication was sent and wherein during node initialization, a node coupled to the output port listens to grant packets and uses the unique identifier as its node identifier in subsequent transactions over the data network.

15. (Previously presented) A data network comprising:

a sending node;

a receiving node coupled to receive a plurality of data information packets from the sending node; and

at least a first and second transmission channel coupled to the sending and receiving nodes, wherein each data information packet transmitted across the network is selected for transmission on one of the first and second transmission channels according to predetermined criteria wherein the first and second transmission channels are, respectively, a low latency channel for transmitting data packets meeting a low latency criteria, and a high bandwidth channel for transmitting data packets meeting a high bandwidth criteria;

a scheduler circuit for the high bandwidth channel coupled to the high bandwidth channel and low latency channel; and wherein the scheduler circuit is coupled to receive a request sent into the low latency channel, the request requesting permission to transmit a packet over the high bandwidth channel, the scheduler logic responsive to the request to provide a grant indication over the low latency channel indicating the request was granted; and

wherein the grant indication is provided at a fixed time in each frame, a frame being a predetermined time period, and the grant indication synchronizes nodes of the network to the frame.

18. (Original) The data network as recited in claim 14 wherein the request indication, the grant indication and an acknowledge indication are always sent at different times over the low latency channel, thereby avoiding collisions between the request indication, the grant indication and the acknowledge indication, the acknowledge indication being sent by a receiving node over the low latency channel to indicate successful receipt of information sent over the high bandwidth channel.